CoolPoly® E5101

Polyphenylene Sulfide

Celanese Corporation

Message:

CoolPoly E series of thermally conductive plastics transfers heat, a characteristic previously unavailable in injection molding grade polymers. CoolPoly is lightweight, netshape moldable and allows design freedom in applications previously restricted to metals. The E series is electrically conductive and provides inherent EMI/RFI shielding charactersitics.

General Information			
UL YellowCard	E229777-313955		
Features	Conductivity Heat conduction Electromagnetic shielding (EMI) Good formability Radio frequency shielding (RFI)		
RoHS Compliance	RoHS compliance		
Forms	Particle		
Processing Method	Injection molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.70	g/cm³	ISO 1183
Molding Shrinkage			ASTM D955
Flow	0.30	%	ASTM D955
Transverse flow	0.50	%	ASTM D955
Water Absorption (23°C, 24 hr)	2.0E-3	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	13000	MPa	ISO 527-2
Tensile Stress (Yield)	45.0	MPa	ISO 527-2
Nominal Tensile Strain at Break	0.31	%	ISO 527-2
Flexural Modulus	13000	MPa	ISO 178
Flexural Stress	70.0	MPa	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength	2.0	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	4.0	kJ/m²	ISO 179
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature			
0.45 MPa, not annealed	279	°C	ISO 75-2/B
1.8 MPa, not annealed	248	°C	ISO 75-2/A
Linear thermal expansion coefficient			ASTM D696
Flow: -30 to 30°C	1.5E-4	cm/cm/°C	ASTM D696
Lateral: -30 to 30°C	1.4E-4	cm/cm/°C	ASTM D696

Specific Heat	900	J/kg/°C	ASTM C351
Thermal Conductivity	20	W/m/K	ASTM C177
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	6.0	ohms	ASTM D257
Volume Resistivity	1.1E+3	ohms·cm	ASTM D257
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (1.00 mm)	V-0		UL 94

Additional Information

The value listed as Thermal Conductivity, ASTM C177, was tested in accordance with ASTM E1461.The value listed as Mold Shrinkage, ASTM D955, was tested in accordance with ASTM D551.The value listed as Specific Heat ASTM C351, was teste in accordance with ASTM E1461.Thermal Diffusivity, ASTM E1461: 0.1 cm^2/secEffective Shielding, ASTM D4935, 1GHz: 36 db

Injection	Nominal Value	Unit
Drying Temperature	150	°C
Drying Time	6.0	hr
Dew Point	-40.0	°C
Suggested Max Moisture	0.20	%
Rear Temperature	290 - 315	°C
Middle Temperature	300 - 320	°C
Front Temperature	310 - 330	°C
Processing (Melt) Temp	310 - 335	°C
Mold Temperature	135 - 180	°C
Injection Pressure	62.0 - 165	MPa
Injection Rate	Moderate-Fast	
Holding Pressure	40.0 - 105	MPa
Back Pressure	0.200 - 0.500	MPa
Screw Speed	40 - 80	rpm
Cushion	5.00 - 13.0	mm
Screw Compression Ratio	2.5:1.0	

Recommended distributors for this material

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